Financing – Make Design Decisions

Description

Your program's financing **goals and objectives** and **lending partners** will help orient and guide you as you work with other partners and stakeholders to design your financing activities. The demand for financing will be influenced by market conditions, structure of your program, and the design of the loan product. In BBNP programs, approximately 15-25% of homeowners utilized a loan product offered by the program, with some programs achieving much higher rates of financing uptake by offering competitive interest rates and efficient loan approvals.

Making financing design decisions involves four key steps:

- Define the financing problem or opportunity that you intend to address
- Decide on your program's financing activities
- Determine which functions your program will perform and which functions your partners and/or subcontractors will perform
- Plan for the long-term.

Many programs start by outlining the basic parameters for their financing strategy, then **solicit and choose lending partners** who can help finalize design decisions (which is the order presented in these handbooks). The steps to develop and deliver loans, however, do not need to be performed in this sequence. Instead, you may choose to work with prospective partners on financing program design but complete all major finance design decisions before entering into a partnership with a lender. Regardless of order, keep in mind that lenders can provide valuable feedback on design decisions that can impact your program's success.

Typically, programs choose to undertake one or more of the following financing activities:

- Provide sponsorship and/or marketing support to an existing loan product
- Improve/streamline some or all of the end-to-end process that brings together lenders, contractors, and customers in a way that outperforms (e.g., lower-cost, quicker, simpler, easier) existing loan options
- Provide capital to help directly fund or enhance a loan product.

Your financing design decisions go hand in hand with decisions you make about other program components. For example, financing is often closely coupled with rebates and other non-financial incentives (discussed in **Marketing & Outreach-Make Design Decisions**). The design decisions you make with your partners will also serve as the initial steps for the development of your financing **implementation** and **evaluation** plans.

The following are several key resources that can help you as you begin to design your financing activities. More resources are available on the **Examples**, **Toolbox**, and **Topical Resources** tabs of this handbook:

- DOE's **State and Local Solution Center** contains information about key **financing structures**.

Financing

Stages:

- **EPA's Clean Energy Financing Programs: A Decision Resource for States and Communities** helps state and local governments design the appropriate finance programs for their jurisdiction by describing financing program options, key program components, and factors to consider.
- **The Energy Efficiency Financing Program Implementation Primer**, developed by the State and Local Energy Efficiency Action Network, provides an overview of considerations for designing and implementing successful energy efficiency financing programs.
- **Getting the Biggest Bang for the Buck: Exploring the Rationales and Design Options for Energy Efficiency Financing Programs**, developed by Lawrence Berkeley National Laboratory, provides an overview of the fundamentals of energy efficiency financing program planning and design and provides tools for deciding the objectives and mechanics of energy efficiency financing initiatives.

Find related information across other program components:

- **Market Position & Business Model – Develop a Business Model**
  Define your business model, including market position, products and services, type of customers, financial model, governance structure, and the assets and infrastructure your organization needs.
- **Program Design & Customer Experience – Make Design Decisions**
  Solidify your program strategy and decide which customers you will focus on; what products, services, and support you will provide; and how you will partner with contractors and others to deliver services to your customers.
- **Marketing & Outreach – Make Design Decisions**
  Decide on priority target audience segments, messages, and incentives that will motivate customers.
- **Contractor Engagement & Workforce Development – Make Design Decisions**
  Solidify your program strategy and decide which customers you will focus on; what products, services, and support you will provide; and how you will partner with contractors and others to deliver services to your customers.

Step-by-Step

Based on the **financing needs** you identified for your community and the financing **goals and objectives** you established for your program, it is now time to design your program's financing activities.

As your program begins to make decisions regarding financing activities, you are likely to encounter many terms that you may not be familiar with. Please refer to the **Glossary of Key Financing Terms**, developed by DOE, for definitions of some of these terms.

The following are four key steps to consider as you make design decisions:

Define the financing problem or opportunity that you intend to address

Your **market analysis** can help identify the shortcomings of existing loan products and financing programs, as well as opportunities for your program to facilitate greater loan uptake.

In general, programs work to address two basic financing problems or opportunities. These are not mutually exclusive, and depending on market conditions in your community, your program may work to address both:

- Make the loan approval and disbursement process quick and easy for both contractors and homeowners
- Improve the loan terms offered to homeowners (e.g., lower interest rates, less restrictive loan eligibility requirements, longer loan repayment periods).

Making the loan approval and disbursement process quick and easy

To increase access to financing, your program design can focus on offering loans that include a faster and easier lending process. This can involve:

- Decreasing the requirements homeowners need to meet to apply for a loan
- Working with lenders to quicken the loan approval process and the distribution of payments to contractors
- Enabling homeowners to arrange financing through contractors to make the process simpler for them.

Generally, the longer the loan application and approval process, the less likely a homeowner will undertake the energy upgrade.

Your contractors will be a critical ally in your efforts to make the loan process simpler. Most energy efficiency improvements are sold and installed by contractors who have an influential, face-to-face relationship with the homeowner. Homeowners may be actively seeking energy efficiency improvements, but they are rarely in the market for financing. Homeowners are looking to get the best price for the improvements they are making, and tend to be appreciative when contractors can offer financing options to facilitate the sale.

Your market analysis will likely show that contractors can be skeptical about the benefits of financing because it can complicate the sale, slow down payment, and add paperwork to the process. Consequently, your program may find that addressing contractor concerns by facilitating quick loan approvals, limiting the amount of paperwork, and ensuring that contractors receive payment within a few days of completing work can greatly facilitate the uptake of energy efficiency improvements in your community.

Understand the Needs of Contractors

The first consideration in program design is to understand the needs of your participating **contractors**. Residential HVAC and home improvement contractors are generally small businesses with annual sales of less than $5 million. They retain little or no capital in their business, meaning they are unable to loan money directly because they do not have the funds themselves.

Contractors typically require quick payments from customers because they don't have large lines of credit, and often don't have people who can help with administrative work. When asked about payment options, the first response, especially among smaller contractors, is that they want their customers to pay cash (including checks and credit cards).

A simple process and ongoing cash flow are critical to contractor success, and these considerations drive their thinking when it comes to customer financing.

In Their Own Words: Facilitate Program Success by Responding to the Needs of Contractors

Source: U.S. Department of Energy, 2012.

Improving the Loan Terms Offered

Your market analysis may show that the uptake of energy efficiency improvements in your community is hindered by the high upfront cost of home energy upgrades. Loan products may not be available for home energy upgrades, and if they are, factors such as the following may be preventing homeowners from applying for and receiving loans to pay for upgrades:

- High interest rates – homeowners are typically turned off at rates above 9.9%.
- Restrictive loan eligibility requirements – underwriting standards that establish minimum credit scores of 660 generally approve 65% of applicants, but as minimum scores increase towards the 700s, approval rates decline to the mid-50% range, which contractors typically find unsatisfactory. (Loan applicants typically don't know their credit score and/or the program's minimum credit score requirements before applying, so the universe of applicants remains the same regardless of program rules. As the minimum score requirement increases, more applicants are rejected for an insufficient score and approval rates decline).
- Short loan repayment periods (loan term) – the shorter the loan repayment period, the higher monthly payments are. Longer repayment periods result in lower monthly payments for homeowners, and make it easier for contractors to close deals or add additional energy efficient measures to projects.

To increase access to financing, your program design can focus on offering loans that are more attractive to homeowners.

One approach to offering more attractive loans is to offer one of the many forms of a credit enhancement (discussed in detail in the next step of this handbook) to lenders to help reduce the risk or cost associated with them offering home energy loans. Credit enhancements can

- Motivate lenders to improve consumer access to home energy loans
- Extend the term of the loan
- Lower the interest rate
- Reduce loan eligibility requirements.

In Their Own Words: Interest Rates Need to be Low, but They Don't Need to be 0%

Source: U.S. Department of Energy, 2012.

Better Buildings Neighborhood Program partners found that interest rates in the 4–6% range were often low enough to improve loan volume.

Considerations for Supporting a Low Interest Rate

Driving loan volume and contractor participation with a low-rate loan product typically requires a continuous subsidy for two to three years, with no indication that the loan product will be terminated. The lowest market rate for unsecured home energy loans is around 8%, assuming a nonprofit lender (such as a credit union) with a 3% cost of funds, 2% for origination, 2% for servicing, and 1% for losses.

One shortcoming of providing a low interest rate through a credit enhancement is the cost to your program of doing so. Assuming an average loan size of $8,000, reducing the interest rate could require a one-time payment to the financial institution of $200 to $300 for each percentage point reduction (assuming a 1% point reduction reduces interest revenue by $80 per year, each year, for a four-year term). The cost must also be paid as an upfront fee because financial institutions must record the interest rate and other loan details at time of origination.

Consequently, it is much less expensive to choose a lender that has access to low-cost capital (e.g., credit unions have low cost deposits) so your program is reducing an interest rate that is already low.

Michigan Saves – Identifying a Gap and Creating a Product

Michigan Saves is a private, nonprofit entity whose mission is to increase the availability of energy efficiency financing in all market sectors.

At its inception, it performed a market assessment to understand the financial products that banks and credit unions offered. The assessment revealed that financing options specifically designed for the residential energy efficiency market were not available. With this knowledge, Michigan Saves decided to create a product with the following attributes:

- Easy to close
- Contractor-centric
- No high fees for contractors
- Attractive interest rates.

During this process, Michigan Saves contacted the Michigan Credit Union League, which identified 13 credit unions that helped Michigan Saves design the financial product and process. A loan loss reserve was used to allow its financial partners to offer interest rates in the range of 4-6%. Six of the original thirteen credit unions participated in the program launch; as of early 2014, there are nine credit unions participating.

Between October 2012 and February 2014, Michigan Saves closed more than 3,400 loans with a total value of more than $27 million. The program approves approximately 80 loans each month. The applicant approval rate is approximately 60%.

Decide on your program's financing activities

Improving existing or creating new forms of energy efficiency financing generally consists of addressing one or more of the three elements key to successful programs: confidence, capital, and convenience (referred to as the "Three Cs").

- **Confidence:** Do borrowers and contractors know about and trust the lenders that offer the financing?
- **Convenience:** Is the process for obtaining financing simple and quick for both the contractor and the customer?
- **Capital:** Does the program provide access to financing (capital) with attractive rates, minimal fees, and good terms?

Depending on the problem or opportunity you intend to address and your available resources (e.g., money, staff, information technology infrastructure), there are three basic approaches to making financing more available and attractive in your market:

1. Sponsorship and marketing support (the "confidence" of the three Cs)

2. Process improvement (the “convenience” of the three Cs)
3. Economic support (the “capital” of the three Cs).

Build consumer confidence: sponsorship and marketing support

Sponsoring an existing loan product or program is a simple, low-cost, low-risk approach to making energy efficiency financing more available and attractive in your community. It requires no capital, it needs little to no staff expertise relative to financing, and your program does not need to assume any credit or regulatory risk. By providing sponsorship and marketing support, you can improve the loan product’s or program’s name recognition and drive loan application volume.

Sponsorship and marketing support activities can include:

- Referring contractors and customers to existing, qualified lenders that offer loan products that can meet their specific needs
- Strengthening existing marketing and outreach of the loan product performed by lenders, contractors, or other programs through activities such as customer outreach (e.g., flyers, web content, advertisements, meetings, etc.) and/or contractor trainings.

Energy Efficiency Financing for Residences in Colorado (Xcel Energy)

When Colorado’s Xcel Energy set out to establish a program to offer financing to the residential market, they decided to partner with lenders and sponsor existing loan products rather than provide a loan loss reserve, on-bill repayment, or other more costly and resource-intense financing option. Xcel first contracted with a finance consultant to evaluate partnership opportunities. The consultant identified two existing residential energy efficiency loans: (1) an unsecured energy efficiency loan offered by Elevations Credit Union and (2) the federally insured PowerSaver second lien product offered by Bank of Colorado and WJ Bradley Mortgage Company.

Xcel chose to sponsor both products and signed letters of “alliance” with all three financial institutions. Under this arrangement, Xcel works with the lenders to present their loan products to contractors and Xcel customers through workshops, their **website**, and other promotional avenues. In addition, Xcel educates contractors participating in their various demand-side management programs about the loan products so they can offer them to their customers.

Xcel’s name and sponsorship is extremely valuable to the lenders as it gives their product instant name recognition and credibility, which helps them increase loan volume. Xcel benefits from the arrangement by being able to offer financing to their residential market sector without taking on substantial cost or risk.

Multifamily Financing with the Green Refinance Plus Program

Administered by the U.S. Department of Housing and Urban Development (HUD) Federal Housing Administration (FHA) and Fannie Mae, **Green Refinance Plus** allows owners of existing affordable rental housing properties to refinance into new mortgages that include funding for energy- and water-saving upgrades, along with other needed property renovations.

Every 10-15 years, owners of existing multifamily affordable properties typically refinance their mortgages. In older apartment buildings, however, owners are hard-pressed to find additional financing to maintain or improve the physical condition of their properties, including making energy-efficient upgrades. Green Refinance Plus is intended to refinance the expiring mortgages of Low Income Housing Tax Credit and other affordable housing projects and to lower annual operating costs by reducing energy consumption.

Average loan amounts are $3.5 to $5 million, and FHA insures up to an additional 4-5% of the loan amount, or an average of approximately $150,000 to $250,000 per loan, to provide additional loan funds to pay for:

- Property improvements that save energy and water costs for owners and tenants, such as energy efficient windows and ENERGY STAR appliances.
- Other property renovations.

Borrowers obtain a "Green Physical Needs Assessment" completed by a qualified provider (e.g., someone who is either: certified to complete energy audits by RESNET or BPI; a Certified Energy Manager (CEM) or state equivalent; a registered architect; a registered professional engineer; a RESNET certified Home Energy Rater; or a BPI Certified Building Analyst). This assessment identifies property improvements that both reduce energy and operating costs and will help borrowers make rehabilitation choices that will give them the greatest energy savings for their investment. Property owners are able to select the energy- efficiency upgrades that make the most economic sense for their properties.

Learn more about **Green Refinance Plus and program requirements**.

Advance convenience: process improvement

If your program has staff with financing expertise and loan process and/or systems capabilities, you may be able to improve the interactions between lenders, contractors, and customers in a way that streamlines the loan process (e.g., lower-cost, quicker, simpler, easier).

This may involve your organization working to:

- Accept loan applications via the program website, an integrated app on the contractor's website, or through a call center with toll free numbers
- Shorten turnaround times between loan application and approval
- Eliminate steps in the loan application and/or contractor payment process
- Pre-qualify applications
- Develop alternate underwriting criteria to make more homeowners eligible for loans
- Provide marketing tools to contractors to allow them to present the features and benefits of financing to their customers
- Conduct quality assurance inspections in a timely manner so contractors can be paid more quickly.

Ensuring Quick Loan Approvals

Energy efficiency programs have worked with financial partners to streamline the loan approval process. **Pennsylvania's Keystone Home Energy Loan Program**, in partnership with **EnergyWorks Philadelphia**, works with multiple financial institutions to provide quick-approval energy efficiency loans, often within two hours of receiving the application. This is accomplished by underwriting based on a minimum credit score and income and employment information "stated" by the borrower, rather than "verified" via the employer.

In partnership with the **Green Madison program**, Summit Credit Union is developing an online application with "auto-decisioning" features that let a customer know immediately if they qualify for a loan. The program then follows up by checking income levels and employing other safeguards.

Alternative Underwriting Criteria

To increase the number of homeowners eligible for financing, a number of energy efficiency financing programs are deploying alternative underwriting criteria to identify credit-worthy borrowers that do not meet traditional lending standards.

New York

NYSERDA's Green Jobs–Green New York (GJGNY) initiative is using a two-tiered underwriting process to expand access to financing for its Home Performance with ENERGY STAR program.

Tier One underwriting uses standard FICO credit score (minimum 640) and debt to income (DTI) (maximum 50%) metrics to evaluate creditworthiness; 43% of applicants are rejected for this financing. NYSERDA is trying to reduce this decline rate with its Tier Two standards, which offer households with low credit scores or high DTIs a second opportunity to qualify for GJGNY financing. For households with credit scores below 640, NYSERDA Tier Two standards increase the maximum DTI to 55% and use utility bill repayment history in lieu of credit score to assess creditworthiness. For households with FICO scores above 680 that were rejected from Tier One because of their DTI ratios, Tier Two standards increase the maximum DTI to 70% and use utility bill repayment history.

NYSERDA Green Jobs–Green New York Tier Two Underwriting Standards

Eligibility Requirements		Participant Benefits
Tier One FICO ≥640 DTI ≤ 50%		3.99% financing Up to $25,000 (3.49% with Automated Clearing House payment)
Tier Two (problem = low FICO) FICO ≤ 640 DTI ≤ 55% Strong utility bill and mortgage repayment history	**Tier Two (problem = high DTI)** FICO ≥ 680 50% ≤ DTI ≤ 70% Strong utility bill and mortgage repayment history	

Source: **Green Jobs—Green New York**, 2014.

NYSERDA Green Jobs-Green New York Loan Results (Nov. 2010-Dec. 2013)

Tier	Applications Received	Applications Approved	Approval Rate	Loans Closed	Loan Value
Tier One	12,155	6,941	57%	4,055	$39,275,208
Tier Two	873	674	77%	447	$4,309,972
Total	13,028	7,615	58%	4,502	$43,585,180

Source: **Green Jobs—Green New York**, 2014.

Update: As of July 2015, NYSERDA allowed credit scores down to 540 under its loan program. A total of 8,581 Tier 1 loans and 1,312 Tier 2 loans have closed, valued at more than $95 million and $14 million respectively. Loan approval rates are over 75 percent.

Oregon

Craft3, a participating CDFI lender in **Enhabit**, also uses utility bill repayment history to evaluate creditworthiness of borrowers. While Craft3's underwriting process includes a credit score check and review of other debt obligations (e.g., bankruptcies, liens, judgments), instead of analyzing an applicant's DTI, Craft3 examines utility bill repayment history. Using utility bill repayment history in lieu of DTI significantly reduces loan underwriting expenses. Because more households in many programs are rejected for financing due to high DTI than low credit scores, this strategy may be an effective approach for some households that can effectively manage their finances, and utilize cost savings from efficiency improvements to help offset the cost of the loan. As of December 2013, Craft3 had completed more than 2,600 loans valued at $33.4 million, with an average loan amount of $12,500. While the loans have only been made for a few years, loan default rates have been below industry averages.

Source: **Scaling Energy Efficiency in the Heart of the Residential Market: Increasing Middle America's Access to Capital for Energy Improvements**, Lawrence Berkeley National Laboratory, 2012.

Boost access to capital: economic support

If your program is fortunate enough to have financial assets available or can secure such assets ("capital"), you may seek to improve the core elements of a loan product such as the interest rate, terms, fees, applicant approval rates, etc. You can do this by making funds available to lenders to offset their costs related to operations or credit losses, or simply to buy down the interest rate.

There are two primary types of economic support programs often use: credit enhancements and revolving loan funds.

Credit Enhancements

Credit enhancements are a class of tools that reduce lender or investor risk associated with offering loans. Credit enhancements deliver capital providers with a level of protection against losses in the event of borrower default or delinquency. Many home energy upgrade programs include credit enhancements to make loans for home energy upgrades more accessible to a broader target audience.

Credit enhancements can motivate lenders to broaden consumer access to home energy loans, extend the length of time in which a loan is due, and lower interest rates. The terms of credit enhancements can also be used to negotiate favorable loan products and relax loan eligibility requirements.

Types of credit enhancements include:

- **Loan loss reserves (LLRs).** An LLR sets aside a limited pool of funds from which lenders can recover a portion of their losses in the event of borrower defaults. LLRs are one of the most common credit enhancements due to their relative ease of implementation (see call-out box below).
- **Loan guarantees.** A loan guarantee enables lenders to recover all potential losses in the event of borrower default.

- **Debt service reserve funds (DSRF).** A DSRF sets aside a limited pool of funds from which lenders or investors can recover overdue debt service payments on a financial product.
- **Subordinated capital structures.** Program administrators can invest subordinated capital in a loan or pool of loans alongside privately funded senior capital. In the event of customer defaults, the subordinated capital absorbs all losses. The senior capital does not experience any losses until all of the subordinated capital has been exhausted.

Learn More about Credit Enhancements in the Credit Enhancement Overview Guide

The **Credit Enhancement Overview Guide**, developed by the Financing Solutions Working Group of the State and Local Energy Efficiency Action Network, describes the various types of credit enhancements, the trade-offs among them, and what they can be reasonably expected to accomplish to advance energy efficiency goals.

The guide is organized into three sections:

1. Why Offer Credit Enhancements? - An overview of the program objectives that may warrant deploying credit enhancements.
2. Credit Enhancement Basics - A description of common credit enhancement tools and their trade-offs.
3. Additional Resources – A listing of resources on designing and deploying credit enhancements.

Loan Loss Reserves

Loan loss reserves (LLRs) are the most commonly used credit enhancement, frequently deployed to reduce borrowing costs or extend borrowing terms for program participants that would likely qualify for other, often more expensive loan products.

How LLRs work

Under an LLR, funds—typically public or utility—are set aside (“reserved”) as loans are issued (e.g., typically 5% of the total portfolio of loans). In this way, a 5% LLR on a $60 million loan portfolio provides up to $3 million to cover a lender’s losses, should they occur.

The LLR may be specific to a portion of the loss on individual loans. For example, compensation for losses is often limited to 90% of any individual loan, ensuring a natural incentive for lenders to apply appropriate underwriting criteria to all loans.

Under an LLR, funds are placed into an escrow deposit account?either with a separate institution or under their own administration. As loans are made, escrowed funds are transferred to an LLR fund in the amounts specified by the LLR agreement. Projects are then completed and loans are repaid over time according to the loan agreement between the financial partner and the borrower.

Advantages of LLRs

Advantages of loan loss reserve funds include:

- Much of the administrative work is done by financial institutions with pre-existing capacity and experience making loans.
- Programs can stimulate market transformation and eventually function without government capital, by proving to lenders that home energy loans can be profitable.

Program Examples

Rather than simply lowering interest rates, a few innovative programs are using credit enhancements to incentivize their financial partners to offer energy improvement loans to households that would otherwise not have access to capital.

- **The city of Indianapolis** is using a large LLR—with 50% of losses covered—to households in its target income demographic (low to moderate income households).
- The cities of **Madison** and **Milwaukee** used part of their DOE Better Buildings grant to structure a $3 million loan loss reserve to expand access to their loan product. Madison’s and Milwaukee’s 5% LLR reduces losses for their financial partner, Summit Credit Union, in the event of loan defaults and supports a loan pool of up to $60 million. It has been structured so that Summit Credit Union can recover more funds from the LLR on each loan default for lower-credit-quality consumers.

For more information related to LLRs, see Chapter 5 of DOE's Clean Energy Finance Guide for Residential and Commercial Building Improvements, "**Basic Concepts for Clean Energy Unsecured Lending and Loan Loss Reserve Funds**."

DOE Resources

The following DOE templates include details such as loan terms and risk-sharing formulas related to LLR funds:

- **DOE Template Loan Loss Reserve Agreement**
- **DOE Template Financial Institution RFP**

Revolving Loan Funds

A revolving loan fund—which is a source of capital from which loans are made to eligible borrowers—can also be an important component of energy efficiency finance programs.

Loans are issued from the initial capital used to set up the fund, and as loans are repaid, additional loans are made. Often, similarly rated loans are grouped together as an investment and resold to secondary market investors, providing program administrators with an additional replenishing source of capital for new loans.

St. Lucie County, Florida Uses Revolving Loan Fund to Achieve Results

In 2010, **St. Lucie County** partnered with local financial institutions and community leaders to establish a community development financial institution (CDFI), which manages the Solar and Energy Loan Fund (SELF). SELF, a revolving loan fund capitalized with seed money from the Better Buildings Neighborhood Program, provides affordable clean energy financing to low-to-moderate-income homeowners and small businesses.

In 2011, SELF began taking applications for weatherization (i.e., insulation, caulking, window and door replacement), replacement of inefficient air-conditioning systems, and installation of solar thermal and solar photovoltaic systems. The program offers loan amounts from $1,000 to $50,000 with rates ranging from 6.5% to 9% depending on the installed technology. Maximum terms of up to 15 years are available.

The SELF funding goal is to issue $10 million in loans by 2017. As of early 2014, the SELF program has closed 249 loans valued at over $2 million. Cumulative energy savings exceed 1 million kilowatt-hours and the avoidance of 980 metric tons of carbon dioxide. The program has also generated nearly 11,000 labor hours for local contractors.

A revolving loan fund is a particularly effective tool for energy efficiency improvements in the $2,000 to $10,000 range (e.g., time-sensitive replacement of failed equipment, home efficiency upgrades such as attic or wall insulation), because few homeowners have immediate access to this amount of cash and they are reluctant to fund this amount with a credit card, as it will likely approach the card's credit limit.

Revolving loan funds can support:

- Secured or unsecured loans such as energy efficiency mortgages, term loans, and home equity lines of credit
- On-bill financing, which is a mechanism that allows repayment of loans through a customer's utility bills.

Revolving loan funds can also leverage program funding from sponsors and mitigate risk for investors, allowing consumers with lower credit scores to receive loans.

Energy Efficiency Mortgages

Energy efficient mortgages (EEMs) allow borrowers to include the cost of energy efficiency improvements in a mortgage. Lenders offer EEMs through allowing increases in the amount that a borrower can borrow relative to the property value and the debt that the borrower is eligible to carry relative to their income. The Federal Housing Administration and Fannie Mae offer versions of EEMs, including the **FHA 203(k) Rehabilitation Mortgage Insurance Program**.

DOE's Home Energy Score can be used to qualify for a higher mortgage amount

DOE developed the **Home Energy Score** as a low cost and reliable method for estimating the energy use of a home and providing a corresponding "score" to rate the relative energy efficiency of the home based on area location. The Home Energy Score uses a systematic approach to provide a reliable and scientifically-based analysis of a home's energy characteristics and overall energy efficiency. The Home Energy Score uses a 10-point scale with a "1" applying to homes likely to use a large amount of energy and a "10" corresponding to the most energy efficient homes. An average home in the United States will score a "5" on the scale.

Homes that score a "6" or higher on the Home Energy Score scale can qualify for a higher mortgage. HUD has developed guidance on **Home Energy Score and mortgages**.

On-Bill Financing and On-Bill Repayment

On-bill financing (OBF) and on-bill repayment (OBR) allow energy efficiency improvements to be financed or repaid through the utility bill. With OBF, the improvements are funded by utility shareholder or ratepayer funds, and repaid by customers on their utility bills. With OBR, the improvements are funded by a third party and repaid on the utility bill. The payment obligation may be presented as a tariff and "attached" to the meter. This means that the payment obligation must be assumed by the account associated with the individual meter (i.e., whoever is responsible for payment of the utility bill) rather than a specific borrower.

Learn more about on-bill financing and repayment programs.

Revolving loan funds have several advantages:

- They are relatively simple to set up compared to other options.
- Many cities and states already have revolving loan funds that can be used for energy upgrades, so expert assistance is available.
- Funds revolve indefinitely, creating a source of funding that will be available in the long term as long as capital is not exhausted from loan defaults.
- Programs can change eligibility requirements of loan applicants over time as market conditions warrant.

More information about **revolving loan funds** is available through the DOE State and Local Solution Center.

Determine which functions your program will perform and which functions your partners or subcontractors will perform

Once you have identified the financing activities you will undertake, you will next want to identify all of the functions that must be performed for your program to function properly. The key functions for any loan program include the following components:

- Marketing and outreach to borrowers, stakeholders, and contactors
- Application processing
- Underwriting, origination, and funding loans
- Servicing and collections
- Credit enhancement management
- Secondary market activities.

Plan to evaluate each function and determine the functions that (1) your program will perform (those that match your capabilities and that you can perform at a lower cost, quicker, more accurately, etc.) and (2) those that your program partners will perform.

If you haven't already done so when **establishing partnerships with lenders**, develop a list of the functions to be performed by your partners and use it as the basis for a scope of services or scope of work document. Include this list as selection criteria during the procurement of partners and subcontractors. The functions should also be documented in your **program's implementation plan**.

Plan for the long-term

Ultimately, you will likely be looking to create a sustainable market for home energy loans in your community that doesn't require support from your program, so keep that in mind as you make design decisions.

Revolving loan funds and credit enhancements can be effective tools to prove to the market that home energy loans can be profitable and that the associated risk is for lenders is manageable, but they are probably not sustainable strategies in the long run.

Roadmap to Self-Sustaining Private Market

The graphic below illustrates how the development of an initial revolving loan fund, converting over time to a loan loss reserve, can lead to a well functioning private market.

Source: U.S. Department of Energy, 2014.

Consider the following strategies to help develop a self-sustaining home energy financing program:

- **Collect data to show that home energy loans can be a profitable line of business for lenders, and a useful tool for homeowners to use to pay for energy upgrades.** Lenders must perceive home energy lending to be a profitable, creditworthy, and sizable business.
- **Leverage credit enhancement monies.** Home energy lending programs that rely on a credit enhancement can leverage modest amounts of grant capital into much larger amounts of lending capital. Better Building Neighborhood partners all used federal funds to attract private sector investment.
- **Build and/or access the secondary market.** Some lenders will decide to originate loans, assemble portfolios, and then seek to refinance or sell the portfolios to a "secondary market" capital source. A typical target portfolio size for an early-stage secondary market transaction is $20 to $25 million although later transactions may be much larger, in excess of $100 million. Availability of financing from the secondary market can drive development of home energy loans and also lower the costs of capital. However, this approach is only possible if underwriting for all of the loans in the portfolio is consistent. It is also made easier if underwriting is consistent with other loans being issued across the country. DOE is supporting work to develop a standard set of underwriting criteria for the secondary market. These criteria would create a standard loan product that is uniform enough for secondary market investors to understand its risks and consider a purchase of the loan product.
- **Link clean energy finance programs to other state government development, finance, and financial system support/reform initiatives.** State governments throughout the nation are seeking new ways to increase home energy lending as a means to meet sustainability goals and enhance economic development and job creation. Consider linking your home energy finance programs to these initiatives to help turn home energy financing into a leading economic development strategy.

For more information related to creating sustainable energy financing programs, see Chapter 7 of DOE's Clean Energy Finance Guide for Residential and Commercial Building Improvements, "**Path to Self-Sustainability**."

Tips for Success

In recent years, hundreds of communities have been working to promote home energy upgrades through programs such as the Better Buildings Neighborhood Program, Home Performance with ENERGY STAR, utility-sponsored programs, and others. The following tips present the top lessons these programs want to share related to this handbook. This list is not exhaustive.

Promote existing loan products when possible before developing new ones

Developing new energy efficiency loan products requires financial expertise and resources that not every program has available or that might not even be necessary. Finding and promoting existing energy efficiency loan products, such as loans that may be offered by a local credit union, your state energy office, or national lenders, or loan products available to contractor networks that meet the needs of your target audience is a simpler, low-cost, low-risk approach to improving access to financing for home energy upgrades. Many programs have partnered with lenders to offer the Federal Housing Administration's **PowerSaver Loans**, a trio of national loan products available for home energy efficiency improvements.

- **EnergyWorks of Philadelphia** decided to leverage an established and successful state financing program rather than starting a financing initiative from scratch. This approach enabled the program to offer loans more quickly and leverage existing consumer and contractor acceptance of its loan offerings. The program leveraged the Keystone Home Energy Loan Program (Keystone HELP), Pennsylvania's award-winning residential financing program with low fixed rates for single measure and whole house improvements. EnergyWorks provided financial support from its Better Buildings Neighborhood Program grant to make Keystone HELP loans available at even lower interest rates to homeowners in the Greater Philadelphia area. By leveraging the existing Keystone HELP loan, and by providing additional consumer and contractor outreach, EnergyWorks was able to help finance over 1,900 upgrades totaling more than $17 million between 2010 and 2013. This represented an annualized increase of close to 40% over pre-EnergyWorks Keystone HELP volume in the Philadelphia region.
- In addition to helping to develop new loan products, **Efficiency Maine** offers and promotes the use of the federally insured FHA unsecured and secured PowerSaver loans. The PowerSaver loan is an energy-related home improvement loan offered under the Federal Housing Administration Title 1 home improvement loan insurance program. PowerSaver provides homeowners with low-cost, long-term funds to make cost-effective energy efficiency improvements to their homes. FHA supports lenders by offering insurance that covers 90% of the loss amount on loans up to $25,000. Between 2010 and October 2013, AFC First—Efficiency Maine's authorized lender—issued 106 PowerSaver loans with a total loan value of nearly $1.3 million, and average loan amount of $12,000.
- When **Colorado's Xcel Energy** set out to establish a program to offer financing to the residential market, they decided to partner with lenders and sponsor existing loan products rather than provide a loan loss reserve, on-bill repayment, or other more costly and resource-intense financing option. Xcel first contracted with a finance consultant to evaluate partnership opportunities. The consultant identified two existing residential energy efficiency loans: an unsecured energy efficiency loan offered by Elevations Credit Union, and the federally insured PowerSaver second lien product offered by Bank of Colorado and WJ Bradley Mortgage Company. Xcel chose to sponsor both products and signed letters of alliance with all three financial institutions. Under this arrangement, Xcel works with the lenders to present their loan products to contractors and Xcel customers through workshops, their **website**, and other promotional avenues.

Streamline the financing process with easy loan applications and quick approvals

Complicated loan and program application processes have deterred many potential customers from following through with an upgrade. Delays and overly burdensome requirements raise barriers to participation. Many programs have successfully employed strategies to reduce the number of requirements that homeowners must meet in order to receive a loan, and to speed the processing of loan applications so projects can proceed quickly once a homeowner decides to move forward.

In Their Own Words: Make the Loan Application Process as Simple as Possible

Source: U.S. Department of Energy, 2012.

- **Enhabit**, formerly Clean Energy Works Oregon, worked with Craft3, a non-profit community development financing institution (CDFI), to help more homeowners qualify for loans and streamline the loan application process. Their approach was to use **utility repayment history as a proxy for credit**. Craft3's underwriting process includes a credit score check and review of other debt obligations (e.g., bankruptcies, liens, judgments); however, Craft3 examines utility bill repayment history in lieu of analyzing an applicant's debt to income ratio (DTI). This approach significantly reduces loan underwriting expenses for Craft3, helps to simplify the loan application process for homeowners, and allows for quicker approvals. Between March 2011 and December 2013, Craft3 completed more than 2,600 loans valued at $33.4 million, with an average loan amount of $12,500. While the loans have been made for only a few years, loan default rates have been below industry averages.
- Pennsylvania's **Keystone Home Energy Loan Program**, administered by AFC First Financial Corporation in partnership with **EnergyWorks Philadelphia** and the Pennsylvania Treasury Department, worked with multiple lenders to provide quick-approval unsecured energy efficiency loans up to $15,000, often within two hours of receiving the application. This was accomplished by underwriting based on a minimum credit score (640 or higher), 50% debt ratio requirement, and income and employment information (as stated by the borrower, rather than verified via the employer). Approximately 70% of applicants are approved for loans. The combination of minimum credit score, debt ratio and other factors used in underwriting allows AFC First to streamline the application process while minimizing risk of borrowers defaulting on their loans. Between 2010 and 2013, EnergyWorks was able to help finance over 1,900 upgrades, totaling more than $17 million.

Consider tiered financing or rebates to encourage deeper upgrades

Without an incentive, homeowners and contractors may limit themselves to smaller upgrade projects. Programs in search of more energy savings have found that some homeowners already interested in an upgrade are amenable to a bigger upgrade when coupled with better financing terms or larger rebates. To encourage deeper upgrades, many successful programs have offered tiered levels of financing or rebates, with terms and amounts that grow more favorable as more energy savings are pursued.

- Maryland's **Be SMART Home program** offered two energy loan options to homeowners: the Be SMART Home ENERGY STAR loan (6.99% interest rate for upgraded heating and systems and efficient appliances) and the Be SMART Home Complete loan (4.99% interest rate for comprehensive home energy improvements). The two loan products were created to provide borrowers with options for completing their home energy upgrades. In addition, the products were intended to encourage hesitant borrowers primarily interested in upgrading one system to consider the benefits of a whole house approach. In many cases, the program noted that borrowers entered the Be SMART Home program for the Be SMART Home ENERGY STAR product; however, after discussions with Be SMART staff about the value of a comprehensive home energy upgrade, many of these borrowers completed an energy assessment and converted to the whole house Be SMART Home Complete approach. Between July 2010 and May 2014, more than $1 million was loaned, with a 66% loan approval rate.
- **EnergyWorks Philadelphia** offered two tiers of loan rates, tying the interest rate to the number of energy efficiency measures incorporated into the home. Homeowners who undertook Gold Star projects using a participating contractor were eligible for the lowest possible rate—0.99% fixed for 10 years. Gold Star projects were guided by an energy assessment and consisted of whole home upgrades that addressed multiple components of the home (e.g., envelope, HVAC, water heating, appliances, etc.). With the Silver Star level, homeowners who installed a single energy efficiency measure (e.g., high efficiency furnace replacement) using a participating contractor could qualify for a 4.99% loan, in addition to rebates and tax credits. Between 2010 and 2013, EnergyWorks issued 559 Gold Star loans worth more than $6.4 million and 1,347 Silver Star loans worth more than $11.4 million.

- **Enhabit**, formerly Clean Energy Works Oregon, initially launched its program with aggressive incentives to generate interest in the program. Early adopters were quick to apply. Enhabit based incentives on the level of projected energy savings: $3,200 for savings of 30% or more, $2,200 for savings between 20% and 30%, and $1,500 for savings between 15% and 20%. After an initial 90 days, incentives were lowered to $1,500 for savings of 30% or more, $1,000 for savings between 20% and 30%, and $500 for savings between 15% and 20%. Recognizing that rebate levels were not sustainable, incentives are currently set at $1,250 for savings of 30% or more, $1,000 for savings between 20% and30% and $500 for savings between 10% and 20%. According to Enhabit Executive Director Derek Smith, “Our incentive structure gets customers excited about aiming high and gives contractors a lever to encourage a more comprehensive scope of work.” Approximately 85% of participants reach the 30% projected savings goal. In addition to being able to access incentives, program participants have access to low cost-financing through Enhabit’s network of lending partners to finance the balance of project costs. Between March 2011 and December 2013, Enhabit, through Craft3 (one of Enhabit’s lending partners), completed more than 2,600 loans valued at $33.4 million.

Design your financing activities to enable long-term sustainability

In order to overcome lenders’ concerns over the risk associated with energy efficiency loans, many Better Buildings Neighborhood Program partners offered credit enhancements to lenders (e.g., loan loss reserve funds) to attract lender participation and to mitigate lender losses in the event of loan defaults. Over the long term, however, a thriving market for energy efficiency financing requires that lenders and capital providers operate without credit enhancements. In order for this to happen, lenders and capital providers need to understand that home energy lending can be profitable and that the risks are manageable. Several Better Buildings Neighborhood Program partners were able to prove the viability of energy efficiency lending.

- **Enhabit**, formerly Clean Energy Works Oregon, took a sequential approach to designing for long-term sustainability through successfully engaging lenders in the program with credit enhancements, but removing these over time following evidence of success. In the process, Enhabit has unlocked millions of dollars of private capital while eliminating the need for program-funded lending support. During its program pilot, the City of Portland partnered with Craft3 to provide low-interest, long-term financing with utility on-bill repayment to program participants. Craft3 used bill payment history as a proxy for credit to help more homeowners qualify for loans. Loan defaults proved to be low from the outset, demonstrating the low risk associated with home energy lending. As Enhabit expanded its program throughout Oregon in 2011 and 2012, additional lenders joined the program. While loan fees and loan loss reserves were initially offered to some of these new lenders, Enhabit eliminated payment of all loan fees and loan loss reserves effective January 1, 2013, and still maintains a strong network of lending partners. Enhabit’s strategy to remove credit enhancements over time has worked because program results (e.g., low defaults) demonstrate that home energy lending can be profitable to lenders while also providing them access to new customers from whom they can solicit additional business. In addition, lenders become more comfortable with lending for energy efficiency if measures are properly installed and deliver the promised savings (which helps ensure loans are repaid) so Enhabit’s quality assurance has been an important factor in supporting the lending partners in non-financial ways. Between program launch in March 2011 and December 2013, Enhabit completed nearly 3,200 residential upgrades and 2,600 loans valued at $33.4 million (through its lending partner, Craft3), generating $49 million in local economic activity.
- The Maryland **Be SMART Multifamily program** utilizes a revolving loan fund initially capitalized with $9 million to provide financing for energy efficiency upgrades in affordable multifamily apartment buildings. Leveraging their Better Buildings Neighborhood Program grant, the Be SMART Multifamily program team worked closely with property managers, owners, and developers to promote the value of energy efficiency in the multifamily housing community and succeeded in leveraging significant private and public capital to finance energy efficiency upgrades. The program’s revolving loan fund allowed short-term loans for loan loss reserves for multifamily upgrade projects accompanied by rehabilitation work funded through Low Income Housing Tax Credits. These short-term loans facilitated several energy upgrade projects that would otherwise not have been possible. These loans also provided for a quick revolution of the loan funds, typically resulting in full repayment of the loan loss reserve within 24 to 36 months (with interest rates ranging from 1% to 4%). The short-term loans have been tremendously beneficial to the viability of the Be SMART Multifamily revolving loan fund, and have enabled program activities to continue at similar projected funding levels into calendar years 2014 and 2015. Between July 2010 and September 2013, the program financed nine projects representing 935 multifamily units. Projected annual energy savings from these projects is more than 3,600 Megawatt-hours (MWh) and more than 260,000 therms.

Tap into secondary market investors to provide lending capital

Historically, energy efficiency financing have required two sources of funding: credit enhancement funds to mitigate risk and support attractive financing, and senior capital to fund the majority of the loan principal. Some residential energy efficiency programs have successfully assembled loan portfolios and sold them to secondary market investors as a new way to fund their programs and loan products. Availability of financing from the secondary market can also lower the costs of capital, allowing programs to offer home energy loans with better interest rates.

- The **Keystone Home Energy Loan Program** (Keystone HELP) is Pennsylvania's financing program for energy efficient home improvements. The program is principally supported by the Pennsylvania Treasury Department, the Pennsylvania Department of Environmental Protection, and the Pennsylvania Housing Finance Agency. Keystone HELP offers low-rate loans to help eligible homeowners make affordable energy efficiency home improvements. Pennsylvania Treasury began Keystone HELP expecting to hold loans to term. Because of the program's success, however, Treasury would exhaust all the funds it was prepared to make available for energy efficiency upgrade loans much sooner than planned. Without additional capital for new loans, Keystone HELP would need to stop offering financing for energy efficiency improvements. Treasury soon realized that a functioning secondary market would be necessary just to continue its own efforts, let alone scale up energy efficiency lending on a national basis. To meet the capital needs of Keystone HELP (and similar programs around the country), the Warehouse for Energy Efficiency Loans (WHEEL) was designed. WHEEL is a collaboration among the Energy Programs Consortium, the Pennsylvania Treasury, Renewable Funding, and Citigroup Global Markets. It provides low-cost, large-scale private capital to state and local government and utility-sponsored residential energy efficiency loan programs. WHEEL's goal is to create a secondary market for clean energy loans, which over time will deliver better financing terms with declining reliance on credit enhancements and other subsidies. In March 2013, Treasury sold almost 4,700 Keystone HELP loans, receiving $23 million in cash and $8.3 million in deferred payments for a projected total of $31.3 million.
- One of **Enhabit's**, formerly Clean Energy Works Oregon, goals is to access secondary markets for residential energy efficiency loans to help bring liquidity to the program. To date, Enhabit has successfully engaged lenders in the program, unlocking millions of dollars of private capital while eliminating credit enhancements. The program has been able to access secondary market investors by eliminating credit enhancements and proving the value of home energy lending. Enhabit's success led its lending partner, Craft3, to pursue the **sale of its loan portfolio** to both mitigate its own risks and replenish funds for lending. Working with Enhabit, Craft3 closed on its first sale of loan assets to Self-Help Credit Union (based in North Carolina) in December 2013. The purchased portfolio included 1,251 loans with a total outstanding value of $15.7 million. Most loans in the purchased portfolio had 20 year terms and ranged in size from approximately $800 to $30,000 with an average loan size of about $12,500. Enhabit continues to work with its lending partners to pursue secondary market sales.

Help contractors understand the program's financing options and benefits, so they can communicate to homeowners

Homeowners do not benefit from access to financing if they don't know about or understand options available to them. Contractors are often the primary transaction point for selling upgrades, and many programs have found that ongoing collaboration with contractors through sales training, regular meetings, and requests for feedback can foster greater understanding and sales of program loan products. Some successful programs have staff in a contractor manager role to organize trainings, address questions and concerns, and overall coordinate relationships with participating contractors. Along with simplifying the financing application process, working with contractors to integrate financing into the home performance sales process avoids making financing another complicated decision point for customers.

In Their Own Words: Empower Contractors to Sell Upgrades and Loans

Source: U.S. Department of Energy, 2012.

In Their Own Words: Make Financing Part of Your Sales Process to All Customers

Source: U.S. Department of Energy, 2012.

- **EnergyWorks of Philadelphia** recognized that contractors can have a tremendous influence on homeowner decisions about how to pay for an energy upgrade. The program therefore trained contractors on how to effectively make affordability of energy efficiency a key part of every sales proposal and assessment. Contractors were also trained on how to better utilize special financing and monthly payment plans to increase both their closing rates and market penetration for more energy efficient home improvements. In addition, EnergyWorks provided contractors with program-sponsored technical training for BPI and RESNET certification, if needed, streamlined the energy assessment process and developed a consistent customer report template, and used an integrated software platform to provide maximum efficiency and customer service to contractors during loan/incentive origination, administration, payment, and reporting. Between 2010 and 2013, EnergyWorks helped finance over 1,900 residential upgrade projects, totaling more than $17 million.
- **Enhabit**, formerly Clean Energy Works Oregon, works with its contractors to provide business coaching, peer mentoring, business development classes, business accounting, and sales training. Supporting the development of these skills is a key factor in Enhabit's success. Trainings include discussion of Enhabit's loan offerings and eligible lenders, and how financing is a valuable tool to help drive sales. These trainings were well-received by contractors and helped them improve their business processes, making them more profitable. Between program launch in March 2011 and December 2013, Enhabit's **close relationship with its contractor partners** resulted in the completion of more than 3,000 upgrades. For more information on how Enhabit partners with their contractors, see the case study **Making the Program Work for Contractors**.
- The **Greater Cincinnati Energy Alliance** (GCEA) recognized that the best way to drive demand for home energy upgrades was to involve local contractors that worked in homes on a daily basis. To that end, GCEA identified, trained, and mentored contractors who were interested in promoting the benefits of energy efficiency and saw it as a means to expand their business. Through a network of participating contractors, homeowners throughout Greater Cincinnati ultimately purchased energy efficiency upgrades and services totaling almost $19 million. Between program launch in 2011 and November 2013, GCEA issued 127 residential loans, totaling more than $1 million with no losses.
- In October 2010, **Austin Energy** rolled out its single-family residential energy "Best Offer Ever" promotion, a three-month special that combined rebates and no-interest loans for energy upgrades. Austin Energy offered **extra contractor training** on the financing to drive sales during the promotion. Once draft promotional plans were in place, Austin Energy hosted a breakfast meeting—getting on their Home Performance with ENERGY STAR contractors' schedules before they were out in the field for the day—to discuss the plans and collect feedback from the contactors. Contractors provided feedback on the launch plans, received sample forms, and were trained on how to use them. The contractors were also candid about their involvement in implementing the offer. Most contractors had not actively marketed financing options before, so Austin Energy walked the group through each party's role and responsibility in the loan process. Austin Energy also scheduled the promotion during the fall and winter, which is typically a slow season for building contractors in otherwise sunny and hot Texas—increasing the likelihood that projects would be completed in a timely manner while also helping contractors avoid seasonal layoffs. As a result of the promotion, a total of 568 participants received Home Performance with ENERGY STAR upgrades through 47 contractors in six months—more than 10 times Austin Energy's typical participation rate.
- As part of the **ShopSmart with JEA** program, Jax Metro Credit Union (JMCU) worked closely with contractors by holding regular meetings (monthly or quarterly) as well as lunch and learn opportunities to educate contractors on the loan options available. The credit union also did outreach to contractors or contractor associations in the community recognizing that the contractors would play an important role in selling benefits of the loan product. It was a long process, nearly 14 months, before the relationship between the credit union and the contractors was fully developed. From 2010-2012, ShopSmart with JEA completed 206 residential upgrades. JMCU members completed more than $1.2 million worth of energy upgrades on 183 homes in the community, and JEA and JMCU financed nearly 90 percent of completed upgrades.

Examples

The following resources are examples from individual residential energy efficiency programs, which include case studies, program presentations and reports, and program materials. The U.S. Department of Energy does not endorse these materials.

Case Studies

Using Credit Enhancements to Leverage Existing CDFI Capacity: Indianapolis EcoHouse Project Loan Program
Author: Lawrence Berkeley National Laboratory
Publication Date: 2012
Highlights the EcoHouse Project Loan Program, which provides fixed interest rate loans as a tool for enabling energy improvements among households that are otherwise unlikely to be able to access affordable financing at market rates.

Low-Interest Rates Entice Philadelphians to Reach for the Stars
Author: U.S. Department of Energy
Publication Date: 2011
Outlines Philadelphia's EnergyWorks program's use of low-interest loans to incentivize homeowners by tying the interest rate to the number of energy efficiency measures incorporated into the home.

Help My House Loan Pilot Program: Program Design and Results
Author: Central Electric Power Cooperative
Publication Date: 2013
This case study highlights the Help My House Pilot Program conducted in South Carolina by Central Electric Power Cooperative that included on-bill financing.

NYSERDA's Green Jobs-Green New York Program: Extending Energy Efficiency Financing to Underserved Households **(373 KB)**
Author: Lawrence Berkeley National Laboratory
Publication Date: 2011
Discusses innovative financing options designed to expand the accessibility of energy efficiency financing to households that typically do not qualify for traditional loans.

Alternative Underwriting Criteria: Using Utility Bill Payment History as a Proxy for Credit: Case Study on Clean Energy Works Oregon (now Enhabit) **(340 KB)**
Author: Lawrence Berkeley National Laboratory
Publication Date: 2012
Highlights a Clean Energy Works Oregon (now Enhabit) program that provides outreach, education, incentives, and low interest, on-bill financing. Using alternative underwriting practices, Clean Energy Works Oregon (now Enhabit) has achieved a rejection rate of just 10% while also maintaining a low loan default rate.

On-Bill Programs that Advance Multifamily Energy Efficiency
Author: Green For All
Publication Date: 2013
This report highlights program and policy attributes that enable successful on-bill programs based on analysis of four program case studies.

Selling an Energy Efficiency Loan Portfolio in Oregon: Resale of the Craft3 Loan Portfolio to Self-Help Credit Union
Author: Lawrence Berkeley National Laboratory
Publication Date: 2014
This policy brief provides insight into the transaction of an on-bill energy efficiency loan portfolio between two mission-oriented lenders, Craft3 in Oregon and Self Help in North Carolina.

Program Presentations & Reports

Aggressive Underwriting and Smart Product Delivery: NYSERDA
Author: Jeff Pitkin, New York State Energy Research and Development Authority
Publication Date: 2012
Presentation describing NYSERDA's alternative underwriting approach for its target market.

Massachusetts HEAT Loan Overview
Author: Elise Avers, Massachusetts Department of Energy Resources
Publication Date: 2012
Presentation that describes the successful elements of the Massachusetts HEAT loan program, including how it is funded and who is eligible.

Effective Incentive Structures: Michigan
Author: Mary Templeton, BetterBuildings for Michigan
Publication Date: 2012
Presentation on how Michigan Saves realigned its incentives to encourage more projects with significant energy savings potential.

Aggressive Underwriting and Smart Product Delivery: Keystone HELP
Author: Tessa Shin, AFC First Financial Corporation
Publication Date: 2012
Presentation describing AFC First's (a lender's) aggressive underwriting and smart product delivery as part of the Keystone HELP program.

PSE&G Multifamily Housing Program **(566 KB)**
Author: Rachael P Fredericks, PSE&G
Publication Date: 2013
This presentation provides an overview of PSE&G's Multifamily Housing Program, highlighting drivers, incentive structure, results, and lessons learned.

Home Energy Affordability Loan (HEAL)
Author: Martha Jane Murray, William J. Clinton Foundation
Publication Date: 2012
Presentation describing the Clinton Foundation's Home Energy Affordability Loan program.

Program Materials

None available at this time.

Toolbox

The following resources are available to help design, implement, and evaluate possible activities related to this handbook. These resources include templates and forms, as well as tools and calculators. The U.S. Department of Energy does not endorse these materials.

Templates & Forms

Financing Program Goals and Design Template Presentation Deck (818 KB)
Author: U.S. Department of Energy
Publication Date: 2011
Template for program administrators to fill out to help determine the goals and design of financing activities.

DOE Template Financial Institution RFP
Author: U.S. Department of Energy
Publication Date: 2010
A template competitive procurement procedure to award loan loss reserve funds to a financial institution partner.

DOE Template Loan Loss Reserve Agreement
Author: U.S. Department of Energy
Publication Date: 2010
A template agreement demonstrating how to address the deposit and use of loan loss reserve funds.

DOE Template Program Agreement
Author: U.S. Department of Energy
Publication Date: 2012
A template agreement that addresses the full energy efficiency or renewable energy loan origination cycle.

Sample Residential Program Term Sheet
Author: U.S. Department of Energy
A sample for defining and elaborating on the specifics of a clean energy loan program.

Financing Program Model (262 KB)
Author: U.S. Department of Energy
Publication Date: 2011
An Excel-based example of a financing program model.

Tools & Calculators

Database of Existing Energy Efficiency Loan Programs (138 KB)
Author: University of North Carolina Environmental Finance Center
Publication Date: 2013
This database (in development) contains information about existing energy efficiency loan programs in the United States. For each loan program the following data is presented: financing mechanism (e.g., credit enhancement, on-bill financing), market (e.g., city, state), sector (e.g., residential single family, residential multi-family), and program sponsorship (e.g., DOE programs, ARRA, private lenders).

Financing Program Decision Tool
Author: U.S. Environmental Protection Agency
The Financing Program Decision Tool is for state and local governments just starting their clean energy financing programs. The tool provides information on the different types of financing available and helps users identify the best options for their program.

Topical Resources

The following resources provide additional topical information related to this handbook, which include presentations, publications, and webcasts. Visit **Examples** for materials from and about individual programs.

Topical Presentations

Residential Energy Efficiency Financing: Key Elements of Program Design
Author: Chris Kramer, Energy Futures Group
Publication Date: 2012
Presentation on the key programmatic elements of financing initiatives.

Sustaining Cost Effective Incentives
Author: Jonathan Doochin, U.S. Green Data Inc.
Publication Date: 2012
This presentation highlights research from U.S. Green Data showing that it is important to pique consumers' interest with incentives, but that their effectiveness can be maximized by making them simple, focusing on people "ready to purchase," and educating consumers about the value of energy efficiency.

Peer Exchange Call Summary: Creative Financing Approaches for Residential Energy Efficiency Financing Programs
Author: U.S. Department of Energy
Publication Date: 2015
This summary from a Better Buildings Residential Network peer exchange call focused on innovative financing approaches programs are using to support residential energy efficiency.

Publications

DOE State and Local Solution Center: Financing for Energy Efficiency and Renewable Energy
Author: U.S. Department of Energy
Publication Date: 2015
Provides tactical information on financing program key elements and descriptions of financing program types by market sector for state and local governments working to set up financing programs.

Clean Energy Financing Programs: A Decision Resource for States and Communities
Author: U.S. Environmental Protection Agency
Publication Date: 2011
Helps state and local governments design the appropriate finance programs for their jurisdiction. It describes financing program options, key components of these programs, and factors for states and communities to consider as they make decisions about getting started or updating their programs.

Energy Efficiency Financing Program Implementation Primer
Author: State and Local Energy Efficiency Action Network
Publication Date: 2014
This report provides an overview of considerations for designing and implementing successful energy efficiency financing programs for existing buildings in the residential and commercial sectors. Information on key issues related to energy efficiency financing programs, guidance to existing resources that provide more in-depth financing program design and implementation information, and strategies for delivering broad customer access to attractive financing products that enhance customer capacity and willingness to invest in energy efficiency to address "first cost" barriers are included.

Options for Raising Capital (and Leveraging Public Funds) for Residential Energy Loan Programs
Author: Environmental Finance Center at The University of North Carolina at Chapel Hill
Publication Date: 2011
This publication outlines capital leveraging models and examples from across the country in which public funds were used to influence energy loan program capital.

Getting the Biggest Bang for the Buck: Exploring the Rationales and Design Options for Energy Efficiency Financing Programs
Author: Lawrence Berkeley National Laboratory
Publication Date: 2013
This report provides an overview of the fundamentals of energy efficiency financing program planning and design and provides tools for deciding the objectives and mechanics of EE financing initiatives. The report walks policymakers and program administrators through key questions that must be resolved to better understand what efficiency financing can be reasonably expected to achieve, and for whom.

Credit Enhancement Overview Guide
Author: State and Local Energy Efficiency Action Network
Publication Date: 2014
This report provides an overview of credit enhancements available, such as loan loss reserves, loan guarantees, debt service reserve funds, and subordinated capital. It also discusses key issues related to credit enhancement, examples of how others have successfully implemented credit enhancements as part of their energy efficiency financing programs, and additional information on existing resources that provide further information on credit enhancement design and implementation.

Glossary of Key Financing Terms **(71 KB)**
Author: U.S. Department of Energy
Publication Date: 2014
Defines key financing terms programs are likely to encounter when designing financing activities.

Scaling Energy Efficiency in the Heart of the Residential Market: Increasing Middle America's Access to Capital for Energy Improvements
Author: Lawrence Berkeley National Laboratory
Publication Date: 2012
This policy brief describes the energy efficiency financing options programs can use to help financial institutions make energy upgrades affordable and accessible to homeowners.

On-Bill Financing for Energy Efficiency Improvements: A Review of Current Program Challenges, Opportunities, and Best Practices
Author: American Council for an Energy-Efficient Economy
Publication Date: 2011
Provides review of on-bill financing programs implemented across the country, challenges to widespread adoption, and program and policy recommendations.

The Bottom Line on Public-Private Finance Tools for Energy Efficiency
Author: World Resources Institute
Publication Date: 2011
Outlines five public-private financing mechanism options for energy efficiency upgrades programs, including on-bill financing, PACE financing, and loan loss reserve funds.

Energy Efficiency Financing: Models and Strategies
Author: The Energy Foundation
Publication Date: 2012
Reviews and summarize energy efficiency financing models and strategies. Models are analyzed according to funding sources, program structures, limits to scale, repayment vehicles, and project risks. Strategies consider applicable building sectors, models, levels of establishment, growth potential, advantages, and disadvantages.

Federal Finance Facilities Available for Energy Efficiency Upgrades and Clean Energy Deployment: A Guide for State, Local & Tribal Leaders and their Partners
Author: U.S. Department of Energy
Publication Date: 2013
This guide provides a snapshot of the federal finance facilities available for energy efficiency upgrades and clean energy deployment. The guide is organized by market segment, and also includes a table that presents each finance facility by type of instrument along with the federal agency that administers the program.

Accessing Secondary Markets as a Capital Source for Energy Efficiency Finance Programs: Program Design Considerations for Policymakers and Administrators
Author: State and Local Energy Efficiency Action Network
Publication Date: 2015
This report is targeted at both policymakers and program administrators who are less familiar with secondary markets and their significance in the energy efficiency context, as well as those that are more familiar with these concepts and may be actively considering secondary market strategies. It covers how efficient access to capital from secondary markets -- reselling energy loans to investors to replenish program funds -- is being advanced as an important enabler of the energy efficiency industry "at scale."

A Policymaker's Guide to Scaling Home Energy Upgrades
Author: State and Local Energy Efficiency Action Network
Publication Date: 2015
This Guide is designed to help state and local policymakers to take full advantage of new policy developments by providing them with a comprehensive set of tools to support launching or accelerating residential energy efficiency programs. The Guide focuses on four categories of policies that have proven particularly effective in providing a framework within which residential energy efficiency programs can thrive: incentives and financing, making the value of energy efficiency visible in the real estate market, data access and standardization, and supporting utility system procurement of energy efficiency.

Best Practice Guidelines for Residential PACE Financing Programs
Author: U.S. Department of Energy
Publication Date: 2016
This document provides updated best practice guidelines to help implement the Policy Framework for PACE Financing Programs, initially announced on October 18, 2009. DOE has developed these revisions to the original "Guidelines for Pilot PACE Financing Programs," initially issued on May 7, 2010, to reflect the evolving structure of the PACE market and incorporate lessons learned from various PACE programs that have been successfully implemented. The revised and updated guidelines focus specifically on best practices and guidelines for residential PACE financing programs.

Webcasts

Finance Planning
Presentation, **Media** **(55 MB)**, **Transcript**
Author: U.S. Department of Energy
Publication Date: 2010
This webcast discussed the broad spectrum of needs financing mechanisms must address within integrated energy efficiency programs.

Tools for Designing & Implementing Better Finance Programs
Presentation, **Media**, **Transcript**
Author: U.S. Department of Energy
Publication Date: 2013
Rather than selecting from two or three fixed models, a successful clean energy finance program will require a sponsor to make a number of design decisions, based on resources available and the needs of the community served. This webinar outlines these key areas for consideration (including potential program sponsors, institutional structure, and potential sources of program revenue) and examples of how organizations across the country have blended design decisions into successful programs.

Loan Loss Reserves: Lessons from the Field
Presentation, **Media**, **Transcript**
Author: U.S. Department of Energy
Publication Date: 2010
This webcast highlights lessons learned from programs that have used loan loss reserve funds.

Financing Energy Improvements on Utility Bills: Case Studies from the Field
Presentation
Author: Eleni Pelican, U.S. Department of Energy; Mark Zimring, Lawrence Berkeley National Laboratory; Greg Leventis, Lawrence Berkeley National Laboratory; Merrian Borgeson, Lawrence Berkeley National Laboratory; Charles Goldman, Lawrence Berkeley National Laboratory; Peter Thompson, Lawrence Berkeley National Laboratory; Ian Hoffman, Lawrence Berkeley National Laboratory
Publication Date: 2014

This webcast provided an overview of on-bill financing programs, and presented three case studies: Manitoba Hydro, New York State Energy Research and Development Authority, and Pacific Gas & Electric (California).

Energy Efficiency and Conservation Loan Program Webinar Series: #3 Residential Energy Efficiency Deep Dive, Part One
Presentation, **Media**, **Transcript**
Author: U.S. Department of Agriculture; U.S. Department of Energy
Publication Date: 2014

This webinar is the third (in a series of six) hosted by USDA Rural Utility Service (RUS) and focusing on the Energy Efficiency and Conservation Loan Program (EECLP). The first in a two-part series, this webinar shares best practices from the more than 40 competitively selected state and local governments who participated in the U.S. Department of Energy's Better Buildings Neighborhood Program, including market position and business model, program design and customer experience, evaluation and data collection, marketing and outreach, financing, and contractor engagement and workforce development.